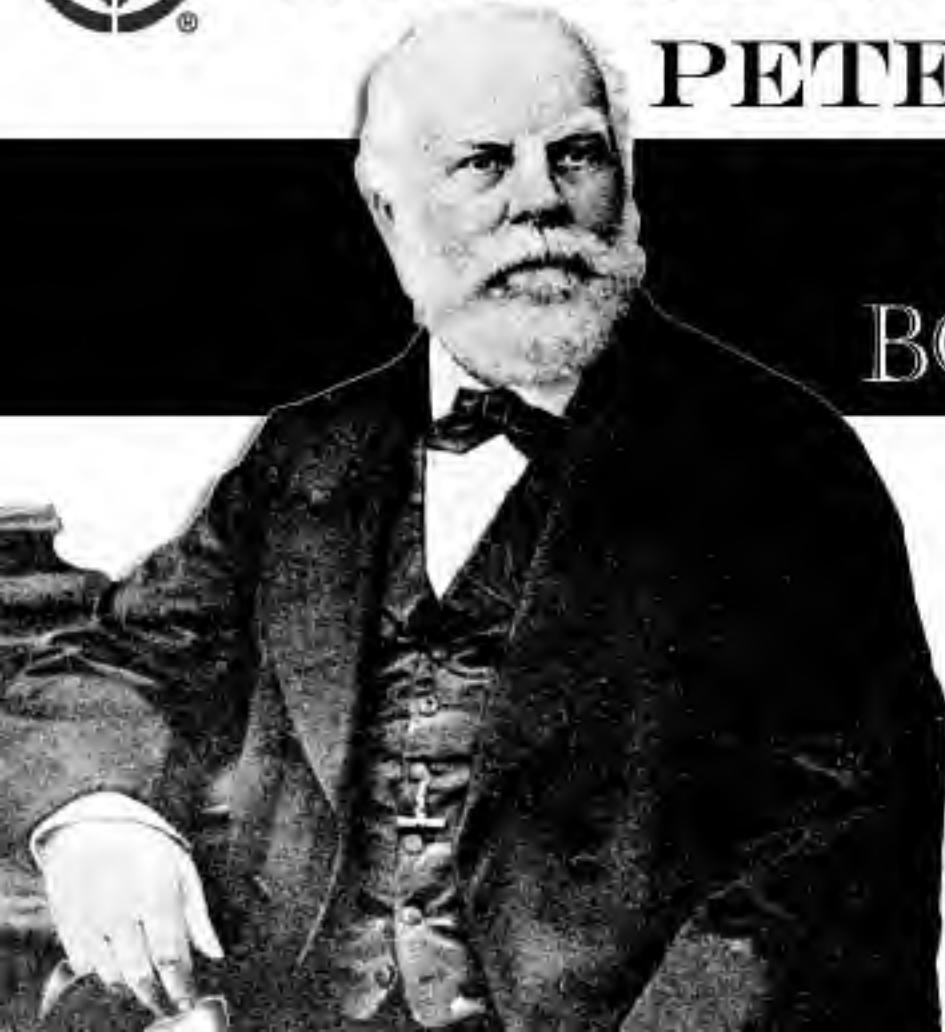




# MISSOURI BOTANICAL GARDEN

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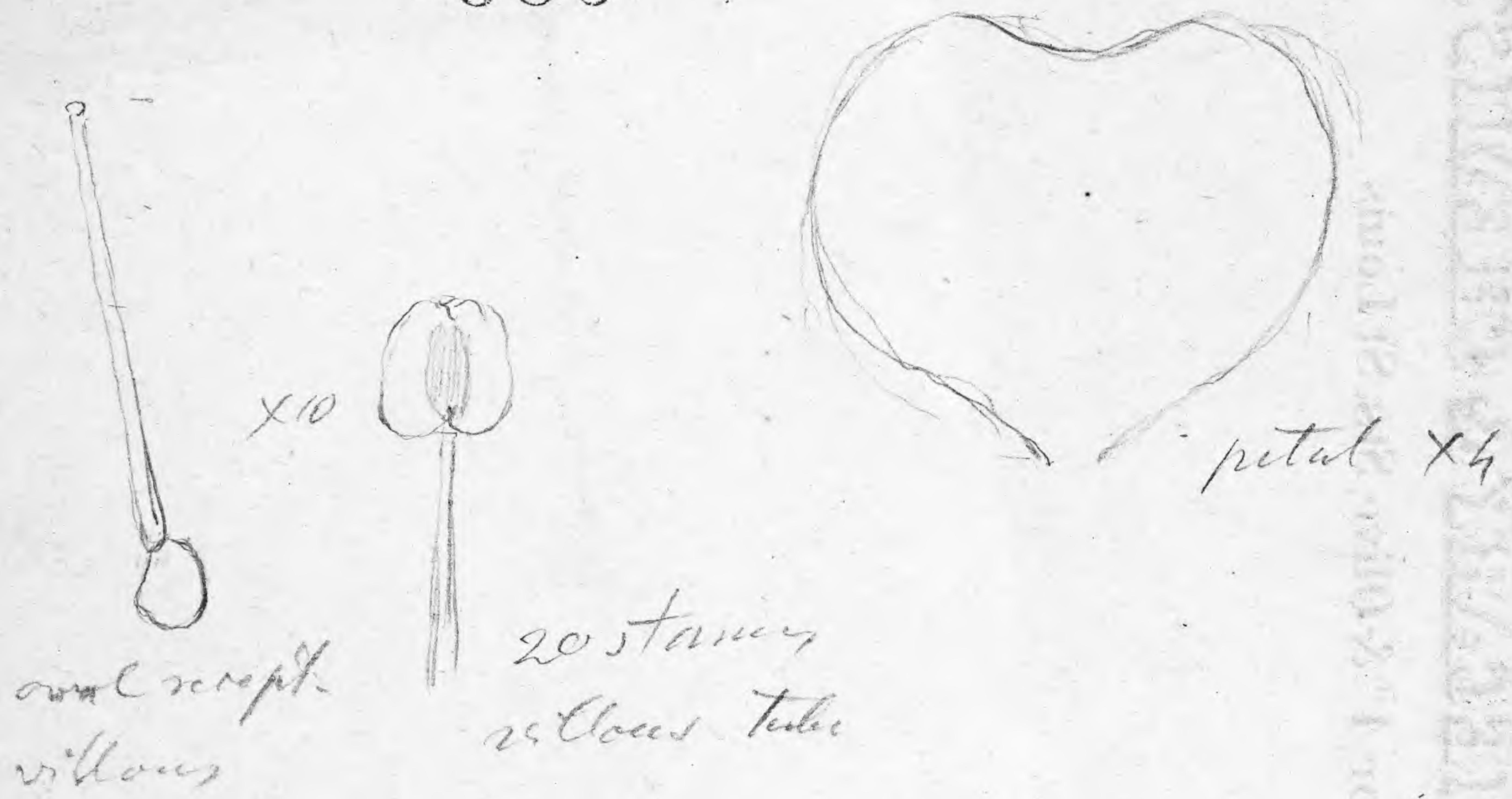
13

Rare forms of downy-fls.

June 8 1867

Heart of Madison Ave. Hyde

683



I smooth  
fol digital



0 1 2 3 4 5 6 7 8 9 10  
cm

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MISSOURI  
BOTANICAL  
GARDEN

**ALEX. Lefitch**  
**APOTHECARY & CHEMIST**

Cor 4<sup>th</sup> & Olive, Sts. St. Louis.

MISSOURI BOTANICAL GARDEN



0 1 2 3 4 5 6 7 8 9 10  
cm

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interrupted descent and ascent took place from January to December, we find in 1862 some interruptions in the steps of that ladder. The electricity in February, 1862, is about four degrees higher than that of January, April somewhat higher than March, and July is the lowest instead of September in 1861. These trifling irregularities may be accounted for by differences in temperature and relative humidity, and by a greater number of thunderstorms in 1862. January of 1862, for instance, was so unusually rainy, that its relative humidity too was unusually high, diminishing thus electricity. But the general features of distribution of electricity throughout the year are apparent in both years, and we may in that respect divide the twelve months of each year into two or three groups. Computing the months which give the highest electricity and those which give the lowest in each year, we find that in both years the months of January, February, March, April, November and December exhibit the highest, and the months of May, June, July, August, September and October the lowest electricity. The first group gives

The aggregate monthly mean of 71.5 degrees of electricity in 1861  
 and 74.6 " " " 1862  
 While the second group gives 29.0 " " " 1861  
 and 25.7 " " " 1862

The second group prevailed therefore in 1861, and the 1st in 1862.

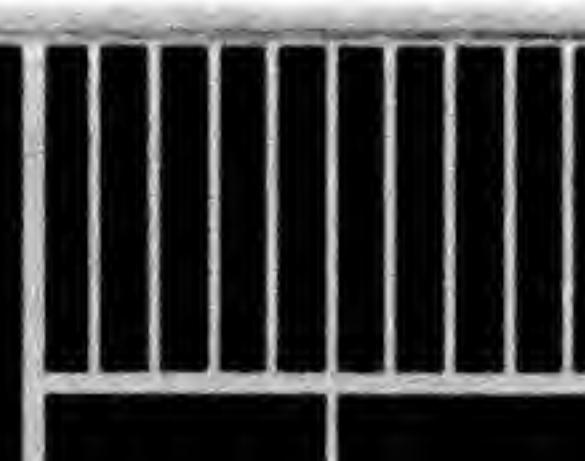
Or we may divide the twelve months of each year into three groups. The first group with the highest electricity is formed by the months of January, February, November and December; the second with a mean electricity by the months of March, April, May and October; and the third with the lowest electricity by the months of June, July, August and September.

The aggregate monthly mean of

The first group in 1861 is 52.9—in 1862, 54.6  
 The second " " 33.5 " 35.2  
 The third " " 14.1 " 10.5

Thus in 1861 the third group prevailed, and in 1862 the first and second. But these differences are so well balanced throughout the year, that the mean of the whole year in 1861 and in 1862 is exactly the same, namely, 8.4. Such an identity in the yearly result, even to decimals, is of course not to be expected every year; but it seems to prove, at least, that the yearly mean of electricity is as constant as that of temperature, of relative humidity, and of atmospheric pressure.

The third table, showing the daily periodicity of atmospheric electricity, confirms the daily two maxima and two minima of electricity as an undeniable fact.



0  
cm

1 2 3 4 5 6 7 8 9 10

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## VI. The appearance of negative electricity was connected in

1861. No. times.	1862. No. times.	
30	32	with thunderstorms.
23	28	with rains without thunder and lightning.
20	4	with dry storms (without rain and without thunder and lightning).
4	3	with snow.
1	0	with fog.
78	67	

VII. *Relation of Rain and Snow to Electricity.*

Rain without thunderstorm was accompanied

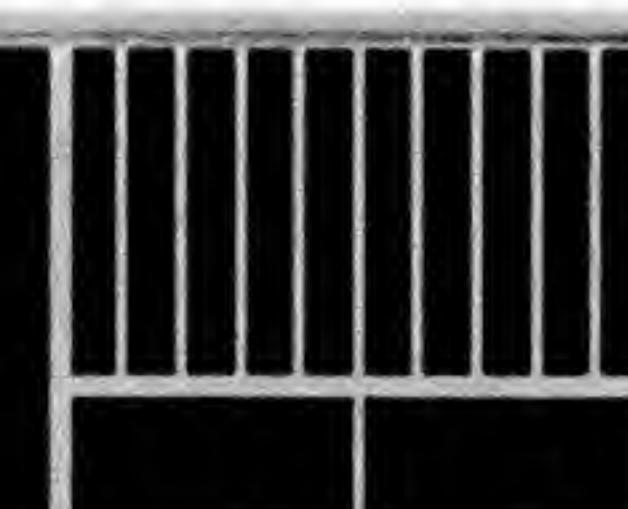
	By Positive Electricity.		By Negative Electricity.		By no Electricity.	
	In 1861.	In 1862.	In 1861.	In 1862.	In 1861.	In 1862.
January.....	7 .....	5 .....	3 .....	2 .....	.....	2 .....
February.....	2 .....	1 .....	4 .....	1 .....	.....	.....
March.....	.....	5 .....	6 .....	4 .....	.....	.....
April.....	8 .....	6 .....	7 .....	11 .....	.....	1 .....
May.....	10 .....	7 .....	1 .....	1 .....	3 .....	1 .....
June.....	7 .....	1 .....	.....	.....	.....	3 .....
July.....	2 .....	4 .....	.....	.....	.....	3 .....
August.....	3 .....	.....	1 .....	.....	1 .....	2 .....
September.....	4 .....	.....	.....	1 .....	4 .....	8 .....
October.....	3 .....	1 .....	1 .....	1 .....	7 .....	1 .....
November.....	2 .....	3 .....	.....	7 .....	.....	7 .....
December.....	2 .....	3 .....	.....	.....	.....	6 .....
	50 + el.	36 + el.	23 — el.	28 — el.	15 no el.	34 no el.

Snowing was accompanied

	By Positive Electricity.		By Negative Electricity.		By no Electricity.	
	In 1861.	In 1862.	In 1861.	In 1862.	In 1861.	In 1862.
January.....	3 .....	9 .....	.....	2 .....	.....	.....
February.....	12 .....	8 .....	.....	1 .....	.....	.....
March.....	3 .....	12 .....	.....	.....	.....	.....
October.....	.....	1 .....	.....	.....	.....	.....
November.....	.....	4 .....	.....	.....	.....	.....
December.....	5 .....	2 .....	2 .....	.....	.....	1 .....
	23 + el.	36 + el.	2 — el.	3 — el.	.....	1 no el.

## REMARKS.

The monthly mean of atmospheric electricity in 1862 was not quite so regular as that in 1861. While in 1861 an un-

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 0 1 2 3 4 5 6 7 8 9 10  
 cm

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"*P. doorespolii*"

June 7 1867

for Gray  
H. Payson. (Gray)

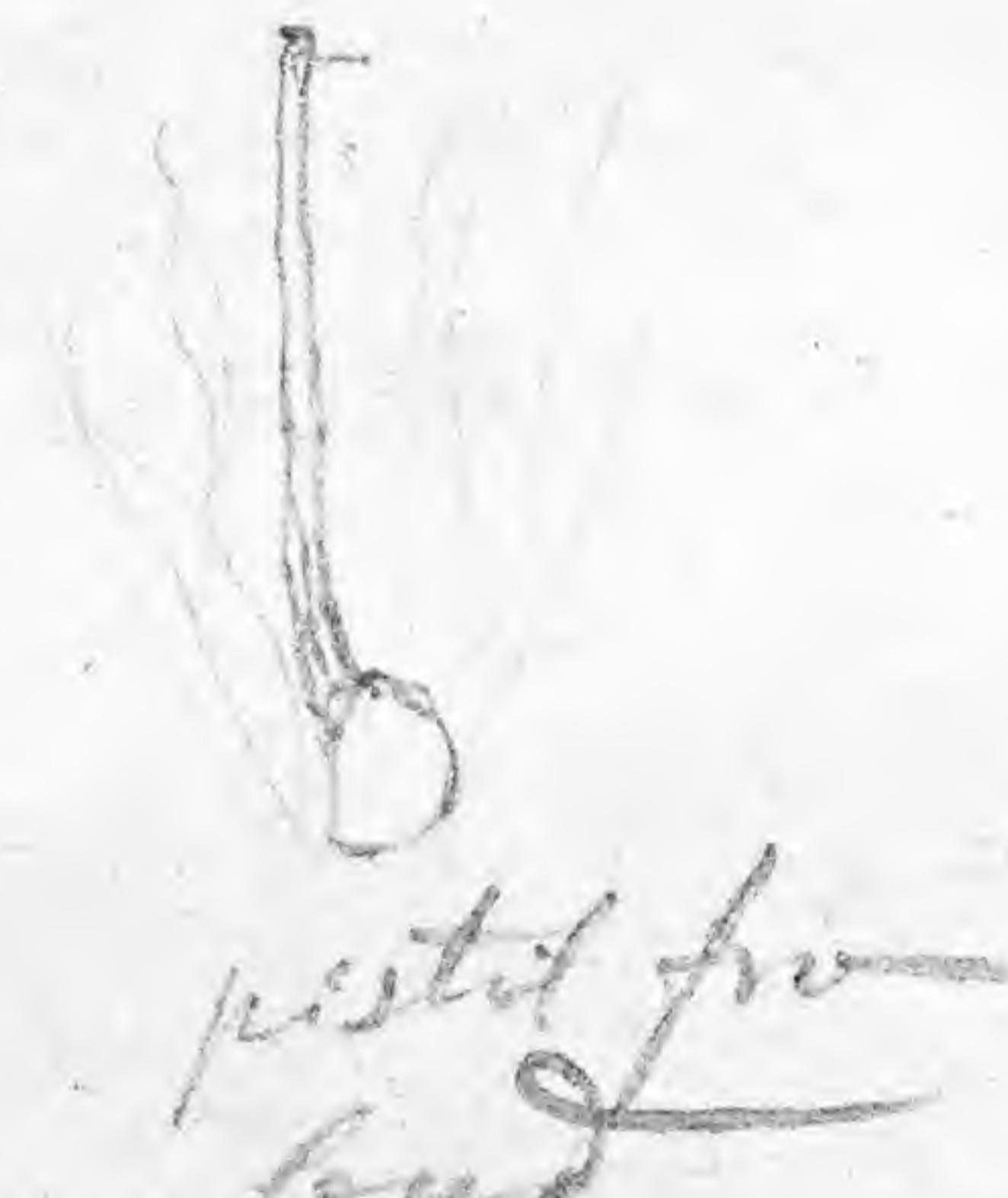
684



petal x10  
very hairy  
sculptured



long stamens  
anthers 2 lobed  
stems apparently 20  
in 2 series



petal from  
bud



x4

petal, orbic.  
not or scarcely  
convergent

fol. quinque  
septent.



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cm

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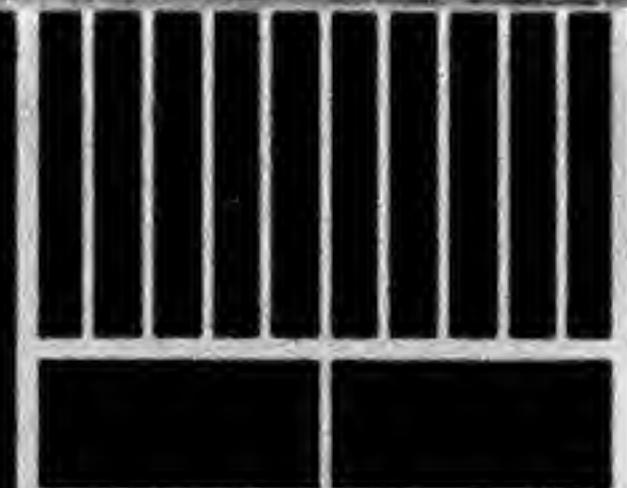


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GARDEN

ANGE & TELL,  
APOTHECARY & CHEMIST,

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cm

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10

Adams 23

June 7 1867

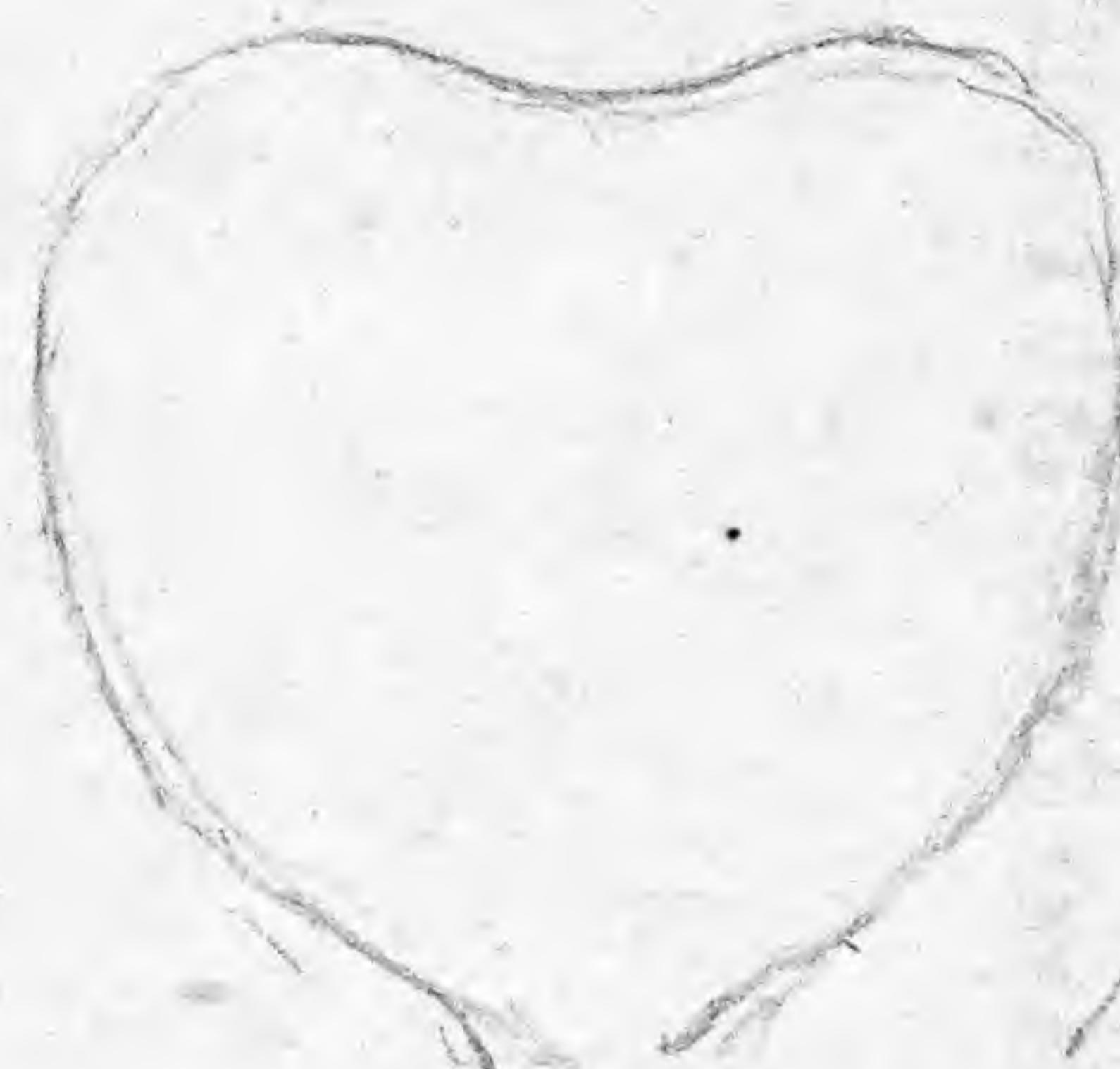
685

Jackson Hole Hayd Jr 12  
1860

pistil x 10  
on hairy  
receptacle



20 or 21 stam.  
calyx & tube villous inside.



petal x 4

Smooth  
fol digit.



0 1 2 3 4 5 6 7 8 9 10  
cm

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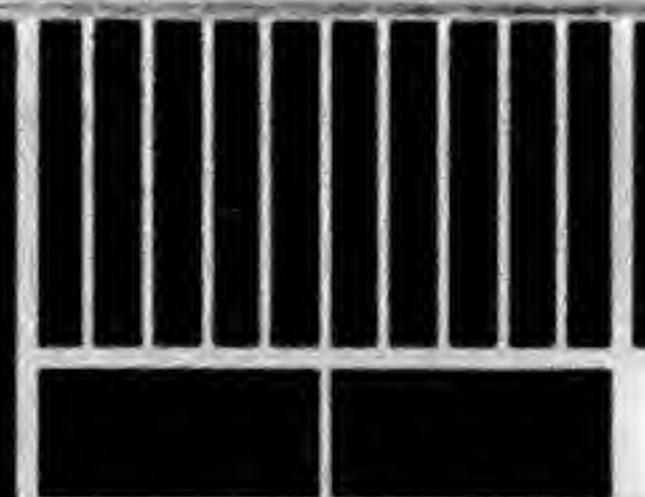


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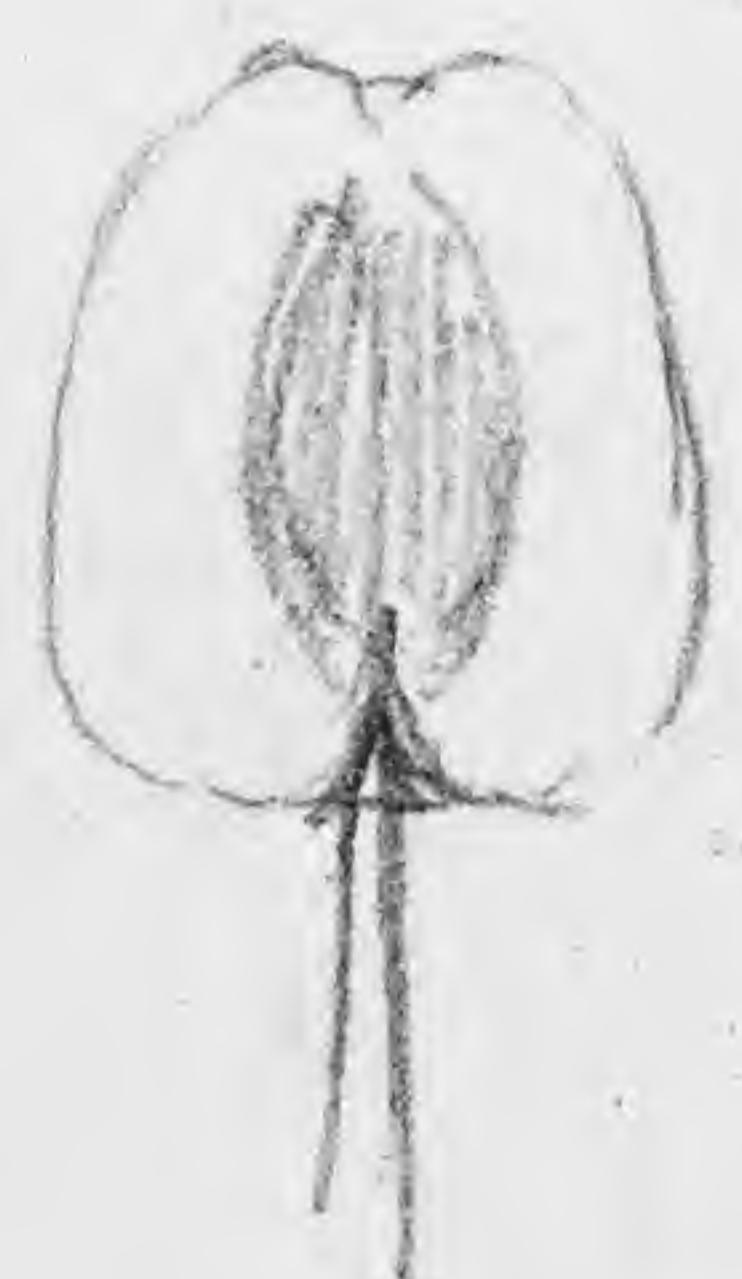
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"*Pot. fastigiatum*" Jun 16 1867  
Santa Fe Foundation no 204

X10



X10.



20 stam



total X6

686



0 1 2 3 4 5 6 7 8 9 10

cm

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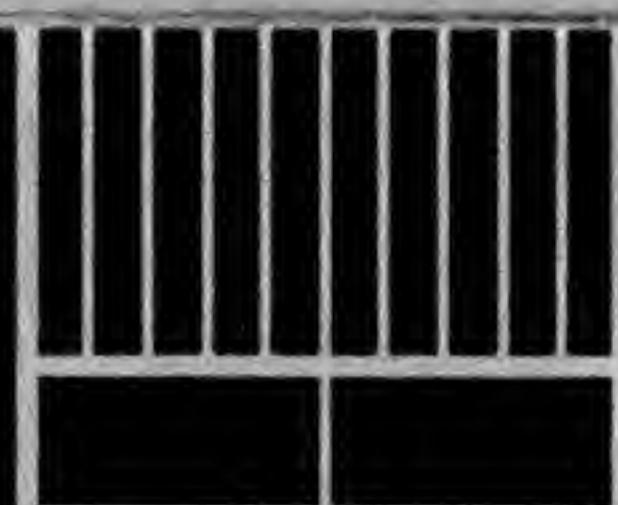


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W.

*P. nivea*

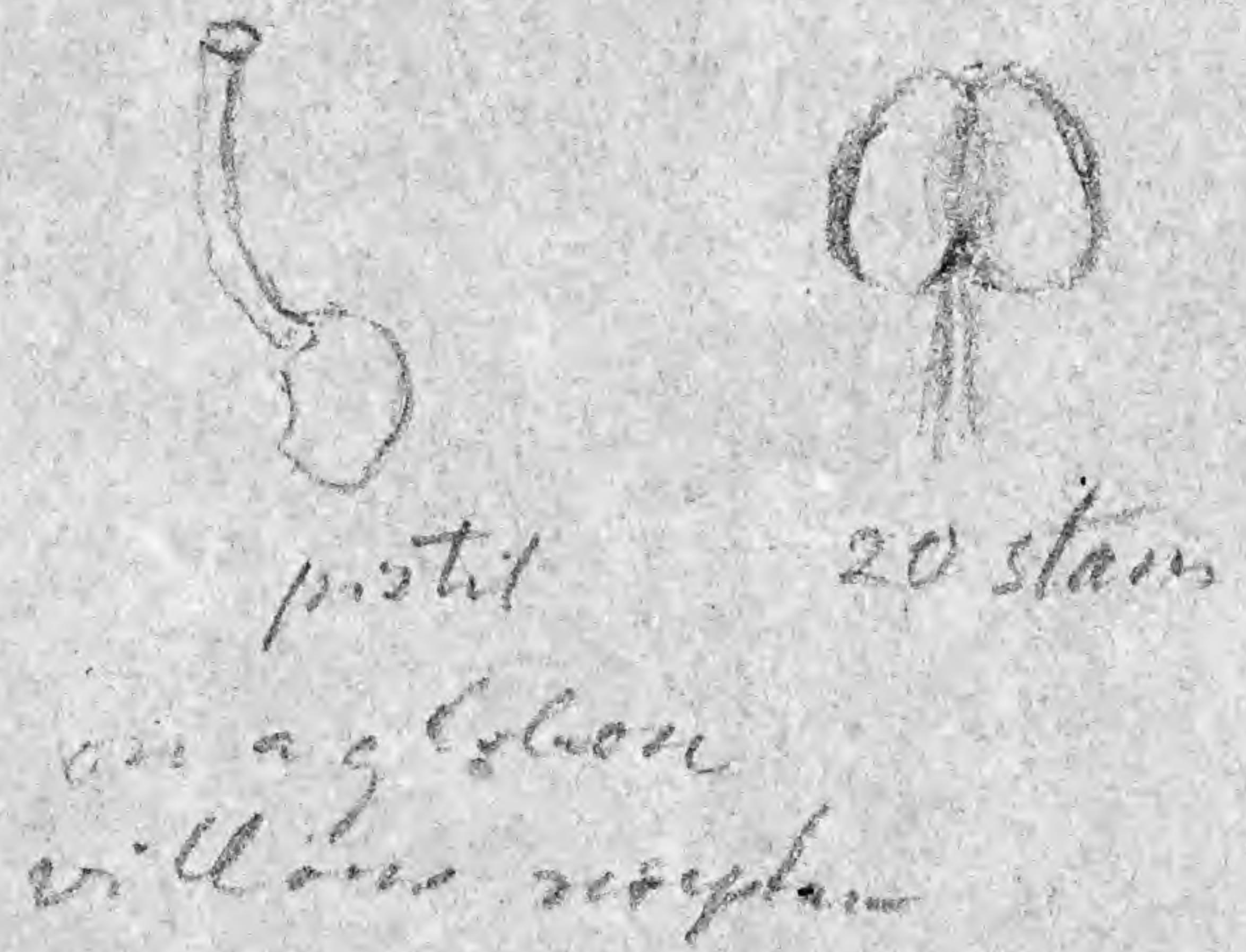
Jan. 10, 1867

Norway, Fries

$\times 10$

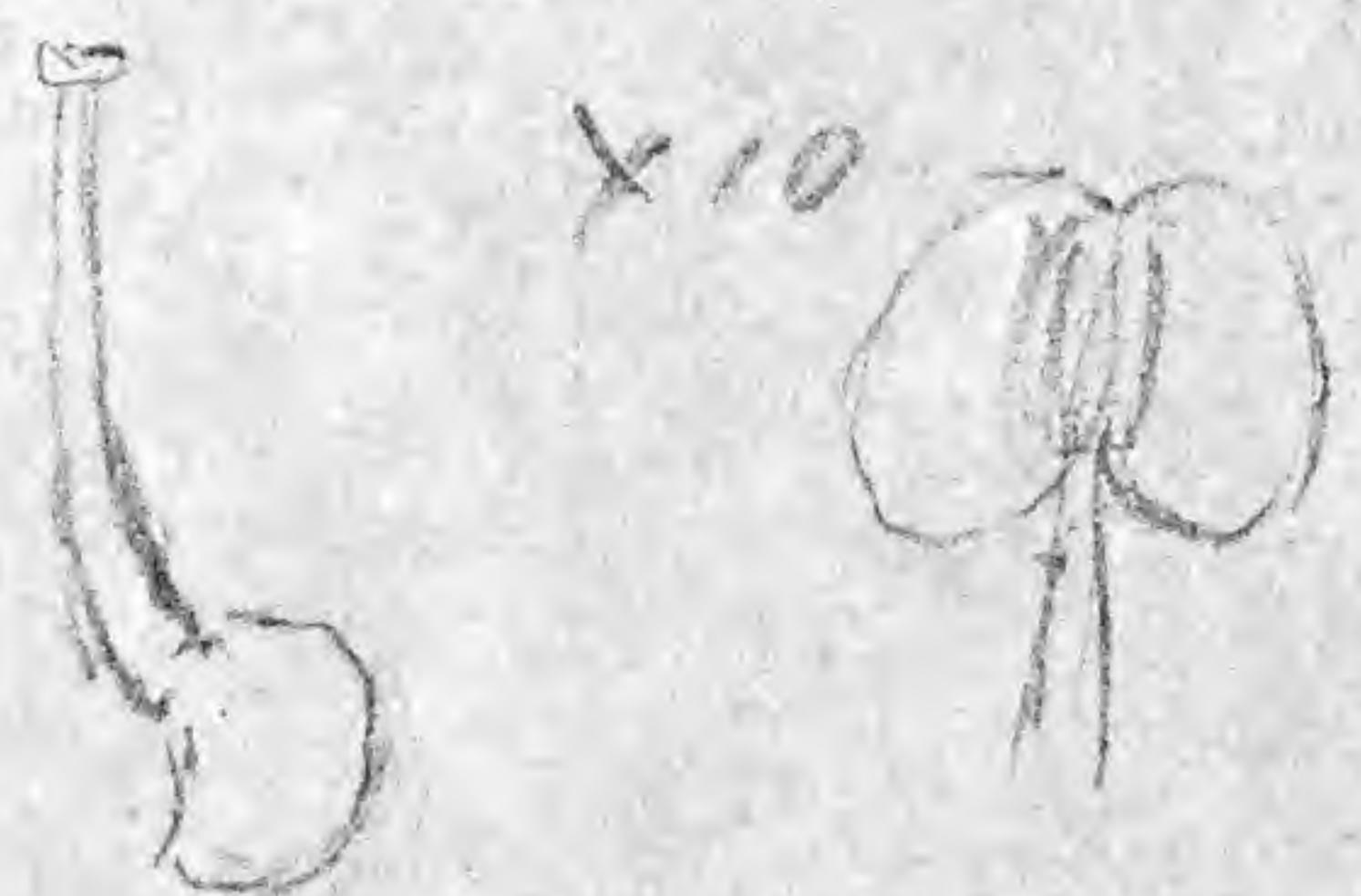
$\times 10$

687



Petal  $\times 4$

Parry, Colorado 214



Petal  $\times 4$



0 1 2 3 4 5 6 7 8 9 10  
cm

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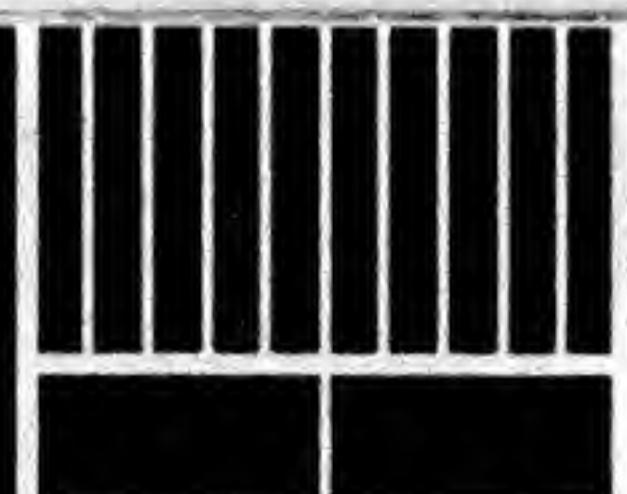


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cm

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## Editorial Department.

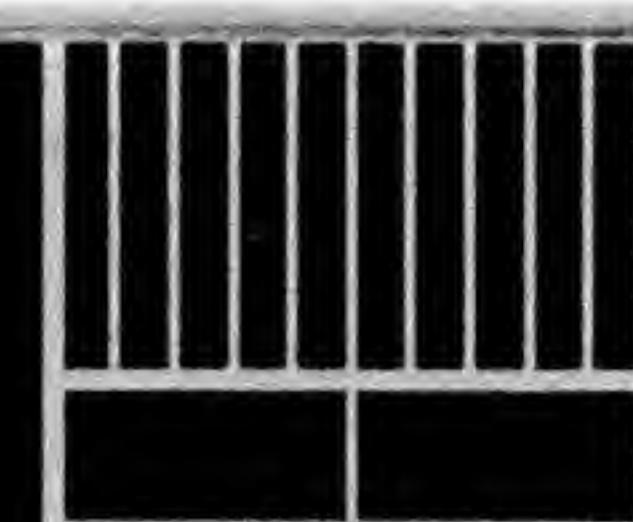
### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

#### PAGET'S SURGICAL PATHOLOGY.

[Continued.]

Mr. Paget embraces in his theory the doctrine of complemental nutrition, first taught by C. F. Wolff, illustrating the subject as follows:

"A great change in nutrition rarely takes place in a single organ at a time; for example, the growth of the beard at the period of puberty in man, the growth and perfection of the plumage of the bird at breeding time; but as in man, when the development of the genital organs is prevented, that of the beard and all other external sexual characters is, as a consequence, hindered, so in birds, when the breeding season ends, and the sexual organs pass gradually into their periodic atrophy, at once the plumage begins to assume the pale and more sober colors, which characterizes the barrenness of winter." He next refers to certain interesting specimens presented to the museum by Sir Philip Egerton, showing the interesting fact, "that if a buck be castrated while his antlers are still covered with velt, their growth is checked, they remain as if truncated, and irregular nodules of bone project from their surfaces." "The fact is not, hitherto, explained; it is inexplicable, by believing that the materials which, in the formation of these organs of external sexual character, are removed from the blood, leave or maintain the blood in the state necessary for the further development, growth and active function of the proper sexual or reproductive organs." "The concurrent development of the thymus gland and air breathing organs during the body's growth of the thyroid gland and the brain, (instances



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2.—*Monthly Mean of Temperature, Fahrenheit.*

## JANUARY.

YEAR.	6 A. M.	9 A. M.	12 M.	3 P. M.	6 P. M.	9 P. M.	MEAN OF MONTH.
1861.....	26.9	29.5	35.3	37.4	33.5	30.8	32.2
1862.....	27.1	27.3	30.1	30.7	29.5	28.5	28.9
1863.....	31.9	34.0	39.4	41.2	38.3	36.1	36.8
1864.....	22.6	25.2	32.6	35.1	31.5	28.0	29.2
1865.....	21.9	24.2	31.5	33.1	30.2	27.9	28.1
1866.....	27.0	29.1	34.8	36.8	33.8	31.5	32.2
Mean.....	26.2	28.2	33.9	35.7	32.8	30.5	31.2

## FEBRUARY.

1861.....	34.2	35.4	43.7	46.7	42.8	39.7	40.4
1862.....	23.9	27.0	33.6	35.9	31.9	29.2	30.2
1863.....	31.3	33.7	38.7	39.4	36.6	34.4	35.7
1864.....	30.4	34.4	42.2	45.5	40.9	36.4	38.3
1865.....	33.4	36.1	41.7	43.3	39.4	36.8	38.4
1866.....	27.3	30.0	37.0	38.7	35.2	32.5	33.4
Mean.....	30.1	32.8	39.5	41.6	37.8	34.8	36.1

3.—*Monthly Mean of Relative Humidity.*

## JANUARY.

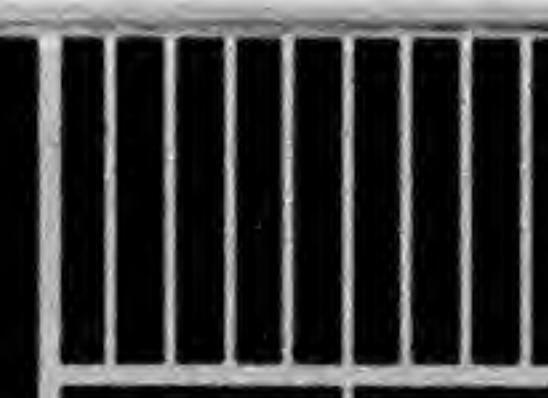
YEAR	6 A. M.	9 A. M.	12 M.	3 P. M.	6 P. M.	9 P. M.	MEAN OF MONTH.
1861.....	.....	.....	.....	.....	.....	.....	72.2
1862.....	91.5	87.5	78.5	79.0	85.2	90.0	85.3
1863.....	94.1	83.9	75.0	71.9	79.3	86.0	81.7
1864.....	90.8	79.3	65.9	62.7	75.4	79.8	75.6
1865.....	89.3	77.5	64.3	62.8	73.7	79.9	74.6
1866.....	87.1	77.1	67.2	65.3	74.6	79.1	75.1
Mean.....	90.6	81.1	70.2	68.3	77.6	82.9	77.4

## FEBRUARY.

1861.....	.....	.....	.....	.....	.....	.....	63.3
1862.....	89.1	79.2	65.8	61.5	72.2	75.5	73.9
1863.....	94.1	83.9	75.0	71.9	79.3	86.0	81.7
1864.....	79.0	65.0	53.5	49.0	59.9	70.0	62.7
1865.....	86.2	73.8	63.7	60.8	70.8	76.7	72.0
1866.....	85.3	70.8	62.9	59.5	68.6	76.5	70.6
Mean.....	86.8	74.5	64.2	60.5	70.2	76.9	70.7

Errata. In the last No. of *Journal*, on page 70, line 6, for the word "destination" read *declination*.

MISSOURI BOTANICAL GARDEN  
PAPERS  
OF  
THE  
MISSOURI BOTANICAL GARDEN  
1861-1866



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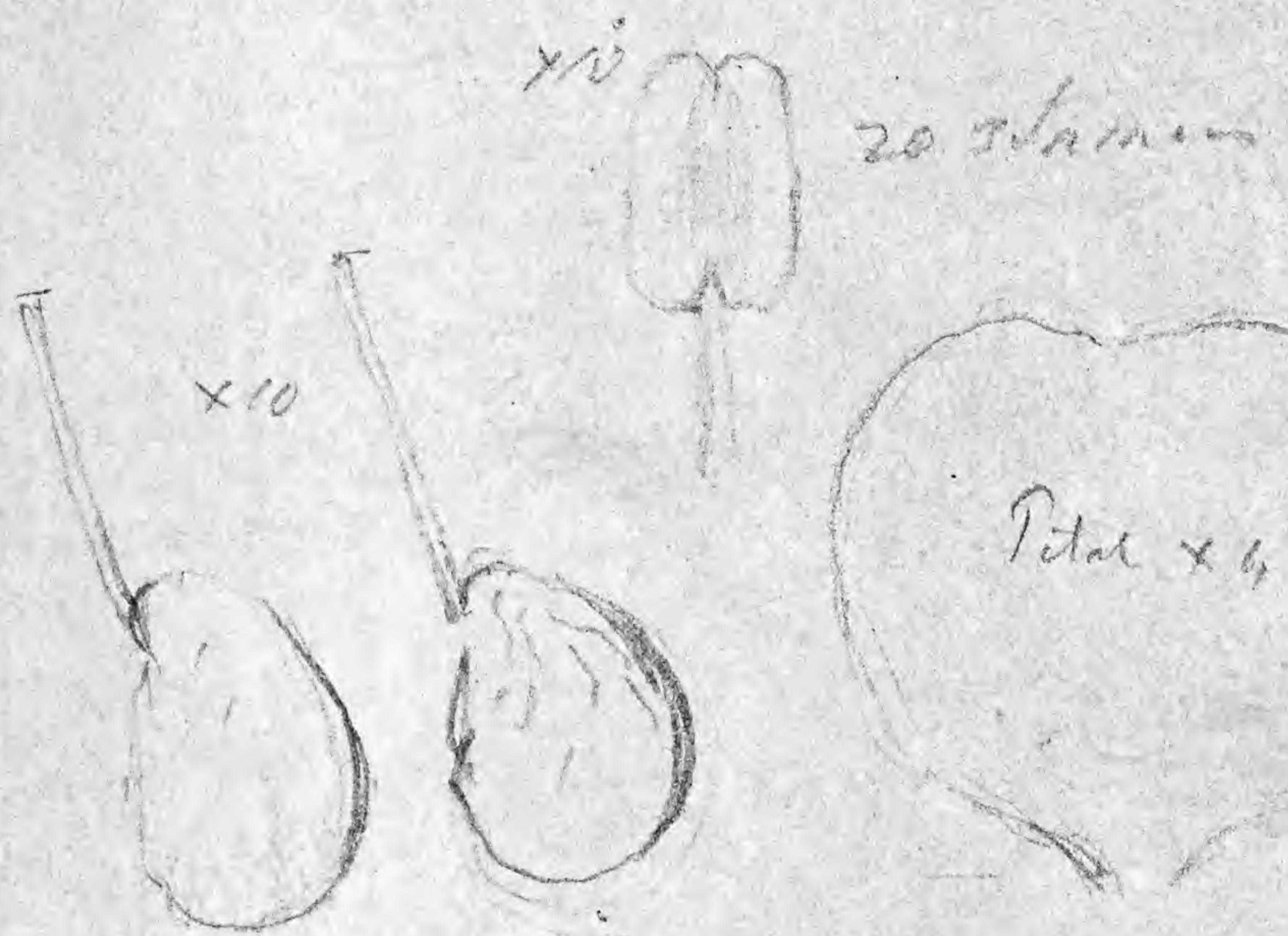
*P. Canadensis*

June 7 1867

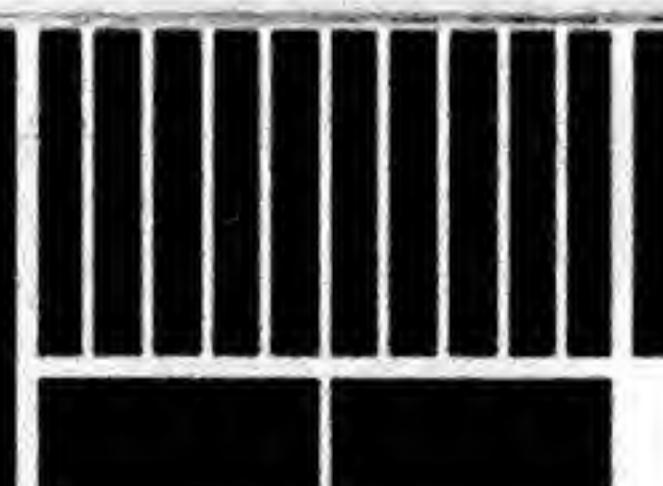
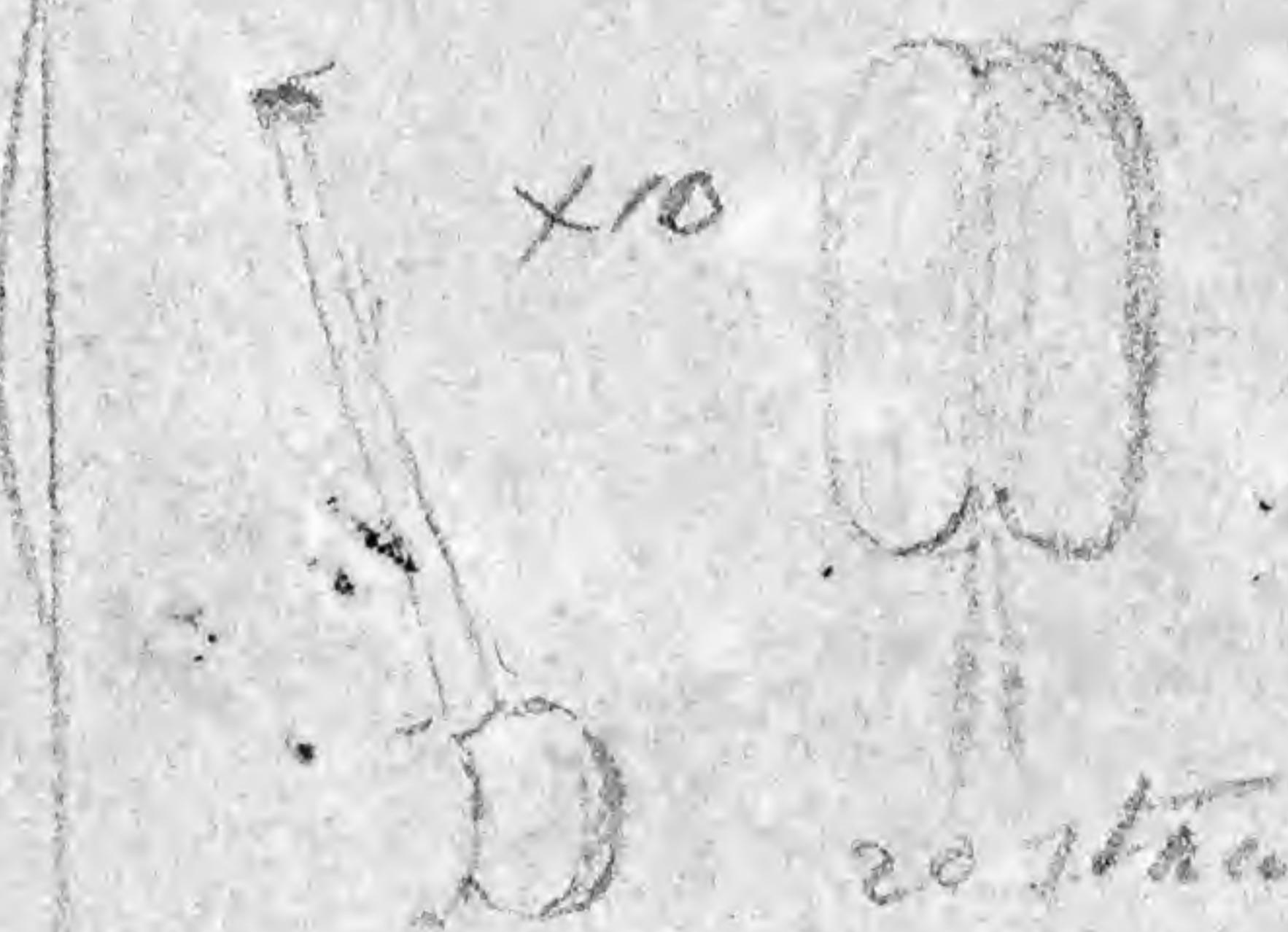
*Rhizome*

688

*Vermont*



achenia from same flower  
*Lemnaceae* regularis



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cm

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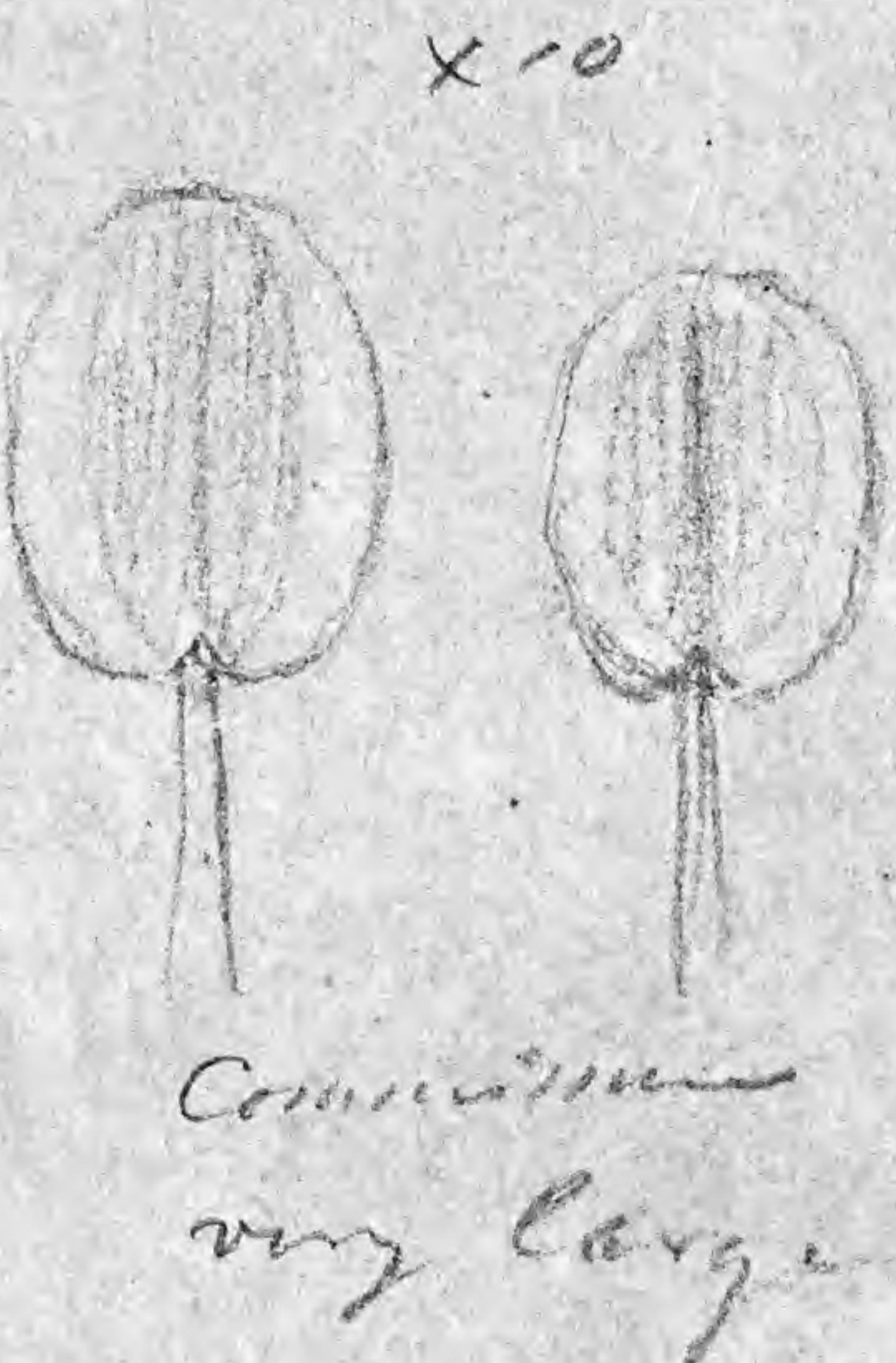
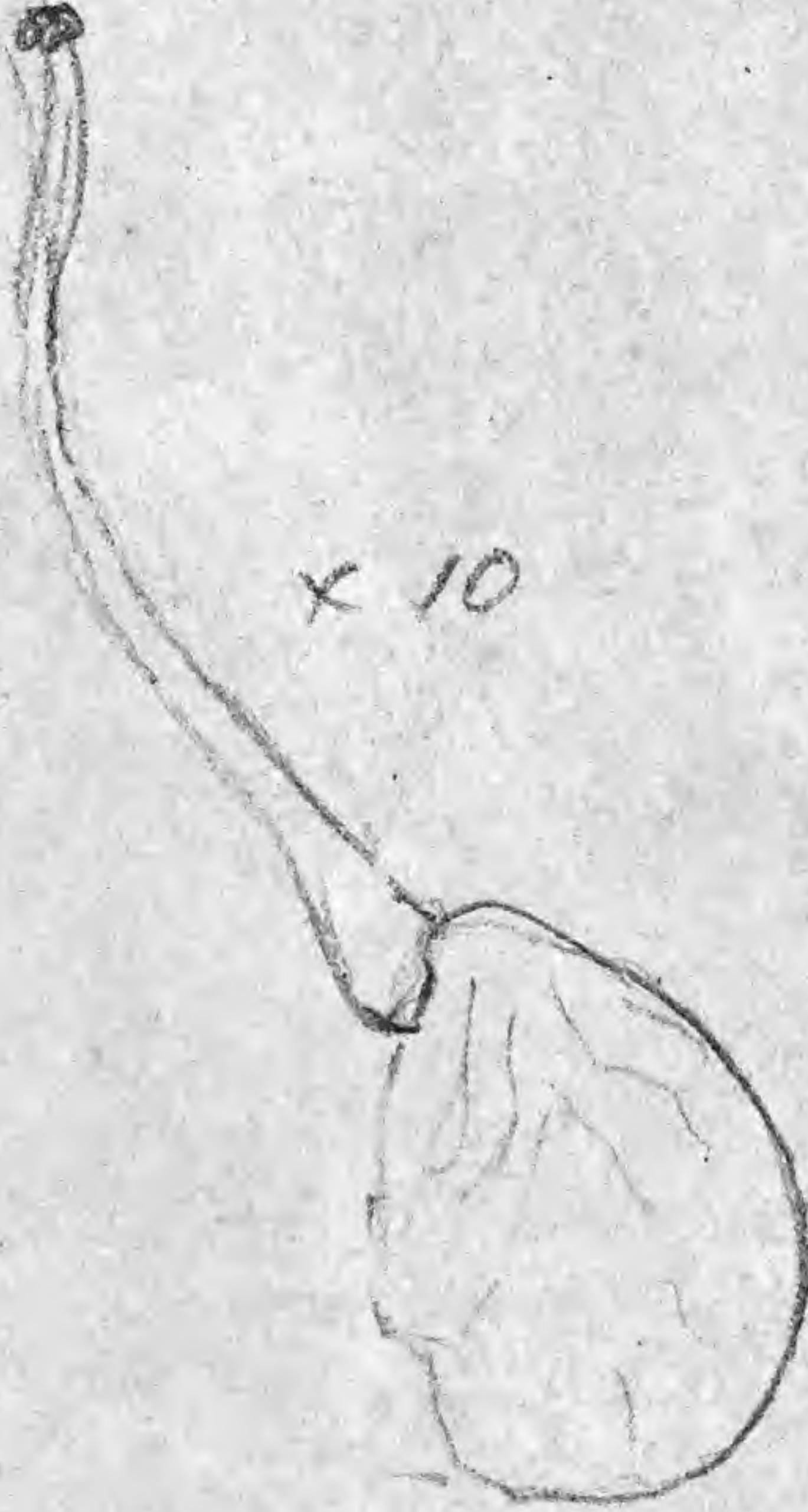
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U

? *Thlaspi* *Thlaspi* Gray  
Copper mines, Thlaspi

June 10 1863

689



achene not ripe  
slightly rugose,  
style bulbous at  
base

single lobes hairy receptacle



0 1 2 3 4 5 6 7 8 9 10  
cm

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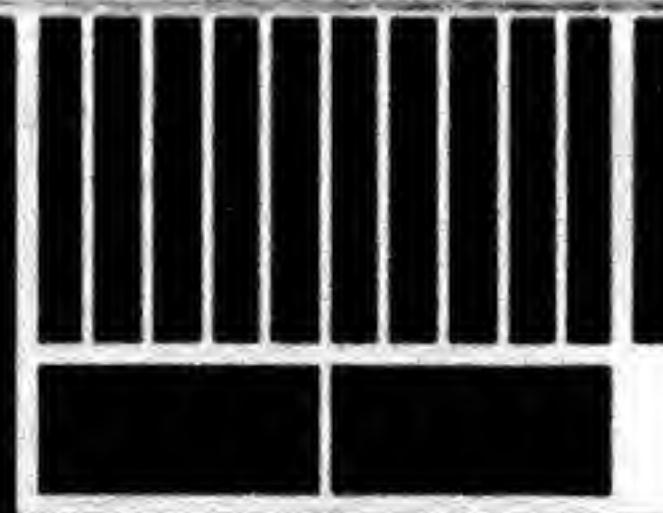


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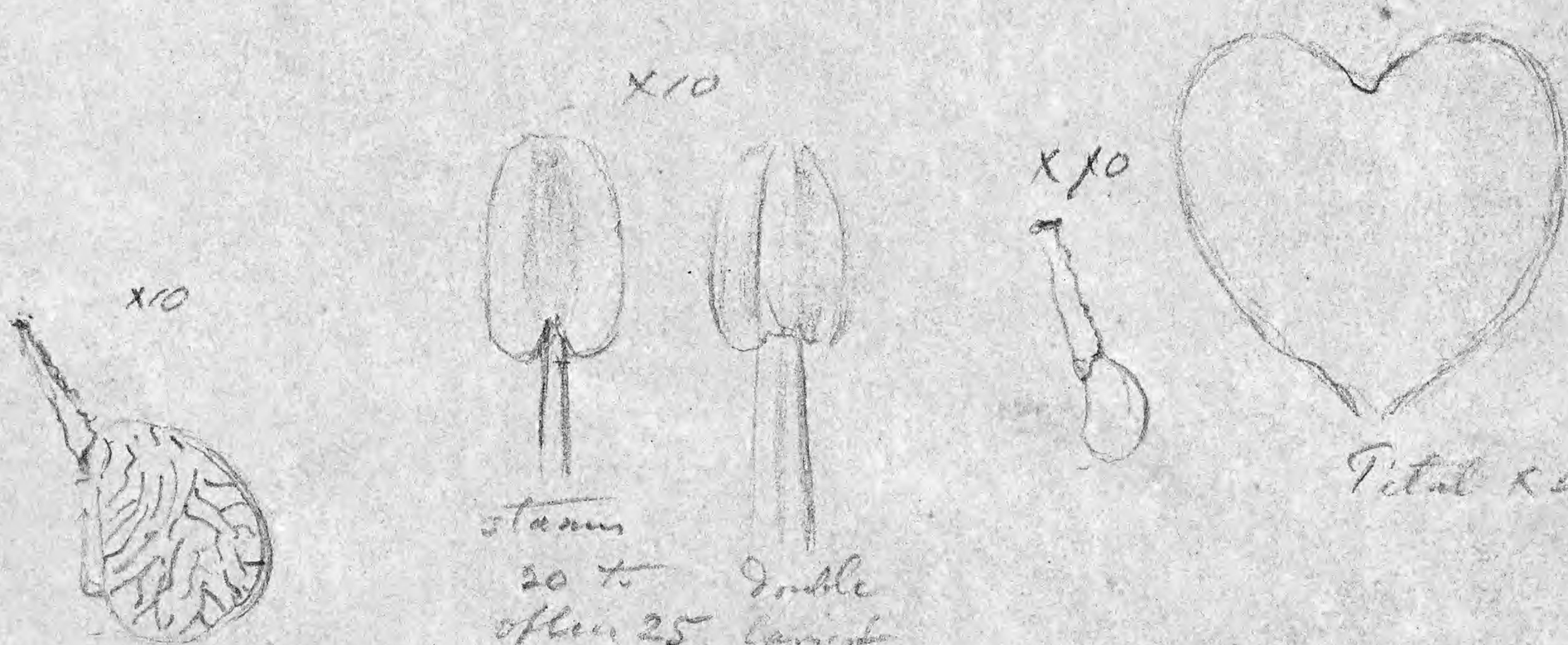


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cc

"P. Norwegian" June 9 1967  
note membranous, short

690



achen compressed  
keeled (not  
fully ripe!)      stamens  
20 to 25  
often 25  
longish  
the largest stamen  
stamens opposite  
sepal often  
two in one instance  
two connate!  
or one double!!



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cm

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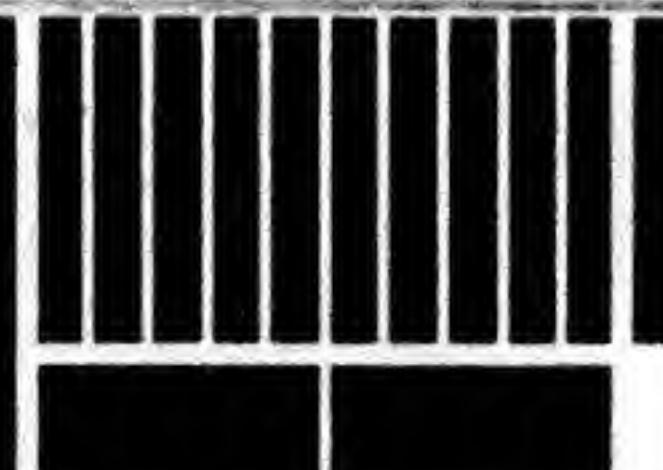


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0 1 2 3 4 5 6 7 8 9 10  
cm

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April 1873.

Potentilla Position of stamens

usually 3, rarely 4 circles of stamens

outer 1. 10 epiphyll

2 5 epiphyll

3 5 epiphyll

inner 4 10 epiphyll, mostly wanting

stamens

Braun

691

Eugster

20 (1.2.3) the usual case

30 (1.2.3.4) sometimes : Pot recta oft : *P. argentea* <sup>small</sup> <sub>Rocky Mts</sub>

25 (1.2.4) sometimes : recta

sometimes : *P. argentea*

25 (1.3.4) comata : fructuosa

20 (1.4) sometimes : impedita

*P. longigida* often

15 (1.3.)

? sometimes : *Millegrana*

15 (3.4.)

*P. millegrana*

10 (4)

Pot pentandra Pot decipiens

5 (3) *L. beldii*



0 1 2 3 4 5 6 7 8 9 10  
cm

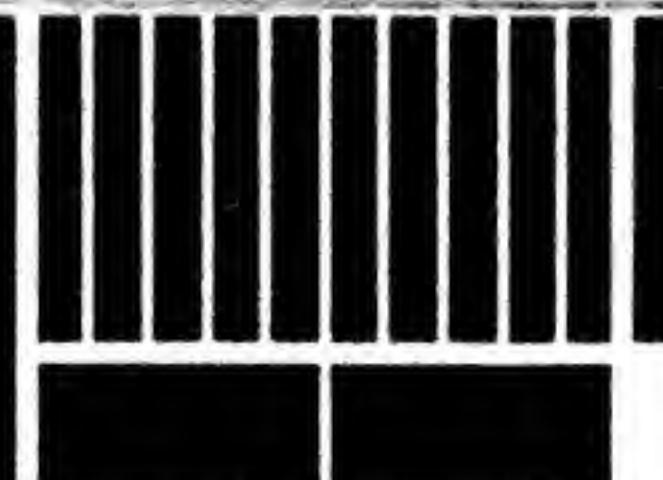
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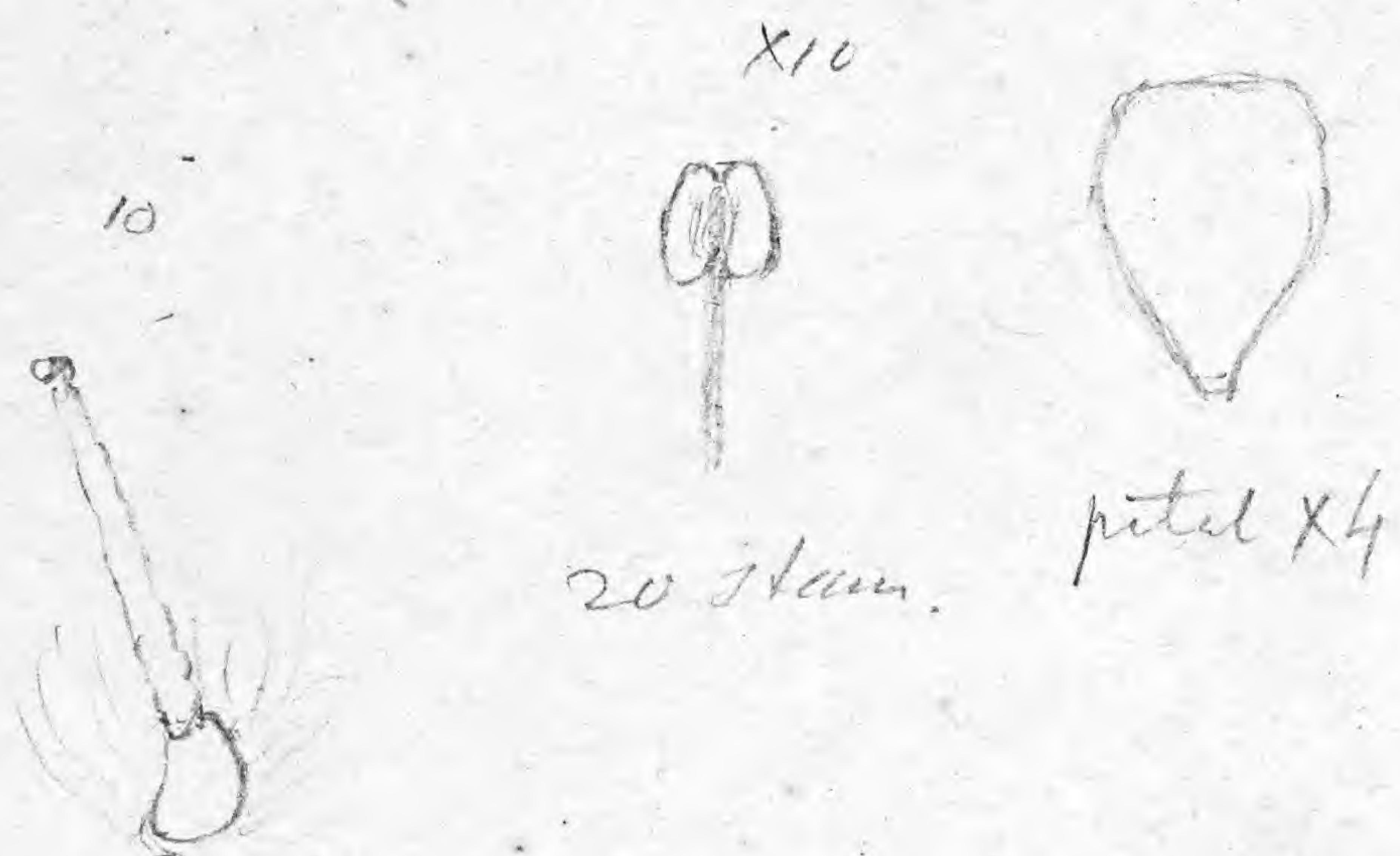


MISSOURI  
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GARDEN

17

June 8 1867

Edwards creek Utah  
H. E.



I only know now  
where this belongs to

Edwards on



0 1 2 3 4 5 6 7 8 9 10  
cm

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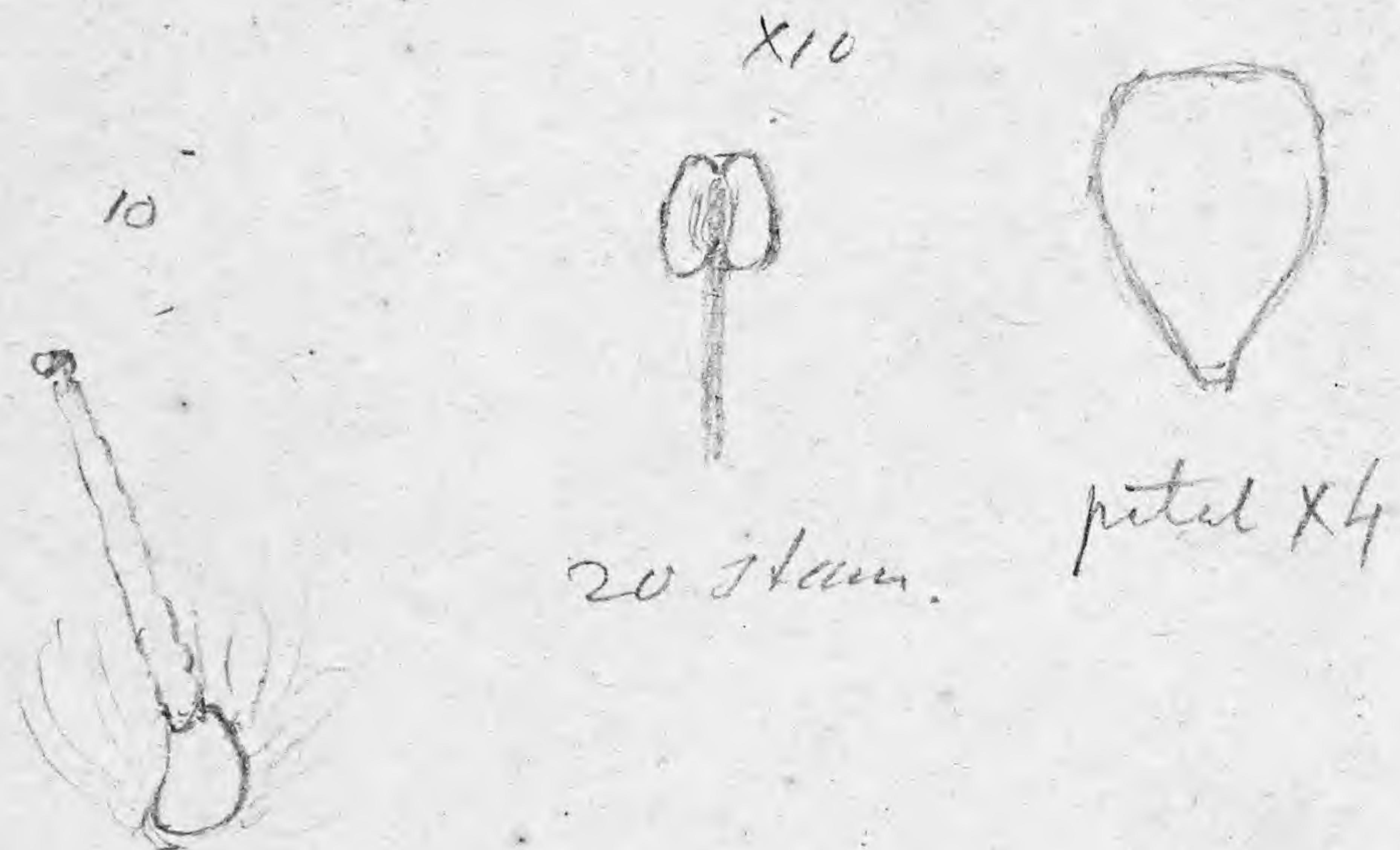


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17

June 8 1867

Edward creek Utah  
H. E.



I don't know now  
where this belongs to



0 1 2 3 4 5 6 7 8 9 10  
cm

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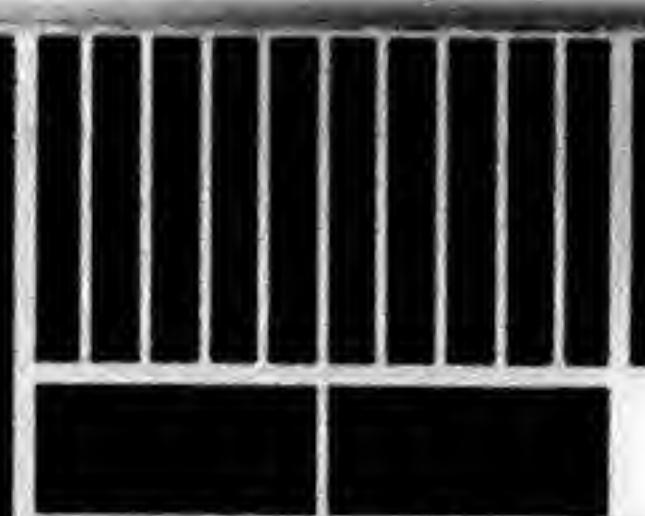


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cm

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XX

June 8 1867

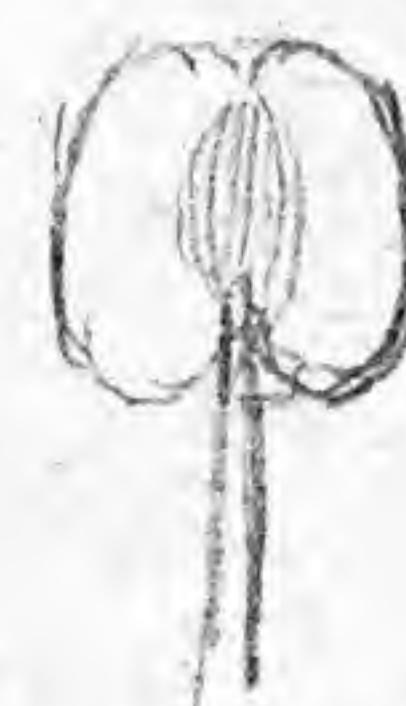
water Mayd.

693

x4



x10

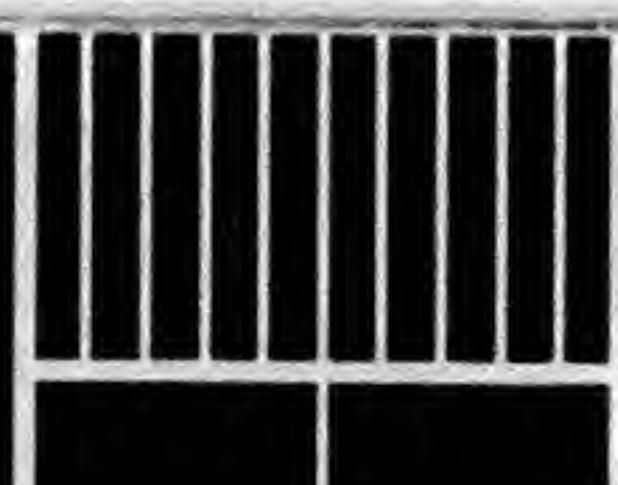


achen x10

Don't know now,  
where this belongs to

XX

water Mayd?



0 1 2 3 4 5 6 7 8 9 10  
cm

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MISSOURI  
BOTANICAL  
GARDEN

XX

June 8 1867

water boyd

693

$\times 4$

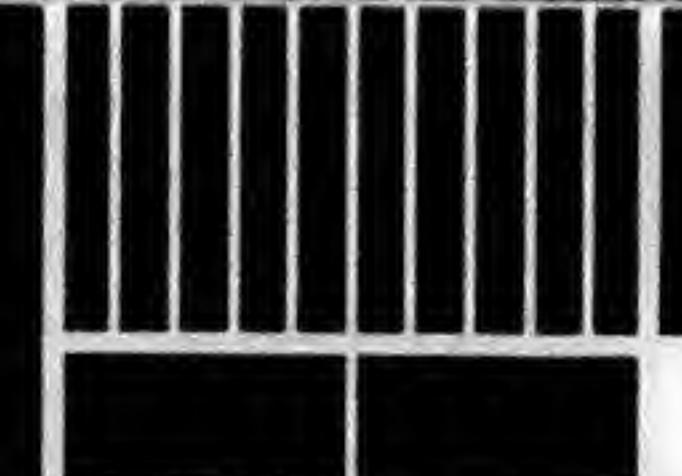


$\times 10$



achen  $\times 10$

Don't know now,  
where this belongs to



0

1

2

3

4

5

6

7

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9

10

cm

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MISSOURI  
BOTANICAL  
GARDEN

**ANEX. Veltol**  
**APOTHECARY & CHEMIST**

Cor 4<sup>th</sup> & Olive Sts. St. Louis.

MISSOURI BOTANICAL GARDEN  
GEORGE ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10  
cm

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MISSOURI  
BOTANICAL  
GARDEN